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ABSTRACT

To spread the word that reading instruction must be based on research and to improve the preparation of teachers to teach reading, this edition of "Basic Education" emphasizes some of the most significant findings of recent reading research and suggests how these findings should translate into immediate action and policy. The first article, "A Primer on Phonemic Awareness: Why It's a Good Idea" (Edward J. Kame'enui and Deborah C. Simmons), looks at the "unambiguous" scientific evidence that, to learn to read, children must be taught to recognize phonemes in spoken words. The second article, "Vocabulary Acquisition: Direct Teaching and Indirect Learning" (Jean H. Osborn and Bonnie B. Armbruster), explores how children learn new vocabulary and the connection between vocabulary, reading comprehension, and school achievement. The third article, "Early Intervention for Children At-Risk for Reading Failure" (G. Reid Lyon and Jack M. Fletcher), examines the importance for children at-risk for reading failure of early intervention, which could greatly reduce the number of school-age children needing compensatory help later on. The last article, "On-Line Staff Development in Reading Skills" (Melissa B. Hayden and Muriel V. Berkeley), reports on the reading skills course the authors offered online to elementary school teachers, finding that teachers were grateful and eager for the research-based instruction and the flexibility of the online experience. (NKA)

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Anne Rogers Poliakoff, Ed.

Basic Education: A Monthly Forum For Analysis & Comment
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A Monthly Forum For Analysis & Comment

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Vol. 46, No. 3, Nov. 2001

BASIC EDUCATION

A Monthly Forum For Analysis & Comment

Anne Rogers Poliakoff, Editor

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EDITOR'S NOTE

"There is hardly a pioneer's hut which does not contain a few odd volumes of Shakespeare. I remember reading ... *Henry V* for the first time in a log cabin." Alexis de Tocqueville, *Democracy in America*, Vol. II.

Reading is the key to freedom. We have known this for a long time. The vision of a people able and eager to read intertwines with the idea of democracy and runs like a golden thread throughout our history on this continent. For Africans brought to this country enslaved, learning to read was the first step toward freedom. When we see old photographs of immigrant children in public schools, their heads bent over books, what we see again is the story of children, in one and the same gesture, learning to read and becoming citizens.

What does it say about us today that two-thirds of our fourth-graders cannot read at the level of proficiency (*NAEP Fourth Grade Reading 2000 Report*)? About half these children read at the Basic level, that is, show "understanding" of what they read and make "relatively obvious" connections to their experiences, and one-half cannot read even that well. Among African American students, 63 percent score below Basic, among Hispanic students, 58 percent.

This appalling situation exists despite the fact that we know, based on scientific research, what children need to learn in order to read and what teaching methods succeed. It exists because this knowledge too rarely finds its way into the classroom. Universities that train teachers either offer candidates no reading courses, or courses that fail to incorporate findings from the most recent research on reading. School districts too often hire teachers without ensuring that they know how to teach children to read.

From the perspective of the Council on Basic Education, with its commitment to the ideal of democratic education—that all children of all the people of the United States should have the opportunity to receive the soundest education afforded

any place in the world—this is an intolerable situation. A child who cannot read, cannot be educated to any degree, or participate effectively as a citizen. To spread the word that we must base our instruction in reading on research and improve the preparation of our teachers to teach reading, we are publishing a new edition of our book, *The Keys to Literacy*, with the addition of an article by Russ Whitehurst on prereading skills for children of preschool age.

And in this issue of *Basic Education*, our authors emphasize some of the most significant findings of recent reading research and suggest how these findings should translate into immediate action and policy. Edward J. Kame'enui and Deborah C. Simmons look at the "unambiguous" scientific evidence that, to learn to read, children must be taught to recognize phonemes in spoken words. Jean H. Osborn and Bonnie B. Armbruster explore how children learn new vocabulary, both through indirect learning and direct teaching, and the connection between vocabulary, reading comprehension, and school achievement. G. Reid Lyon and Jack M. Fletcher examine the importance of early intervention for children at-risk for reading failure, which could greatly reduce the numbers of school-age children needing compensatory help later on. Melissa B. Hayden and Muriel V. Berkeley report on the reading skills course they offered on-line to elementary school teachers, finding teachers grateful and eager for the research-based instruction and the flexibility of the on-line experience.

We confront no more important crisis as a people than the struggle so many of our children face in learning to read. The equation between freedom and reading plays out both in their individual futures, and in our future as a free society. And we know what needs to be done. It is just that simple.

Christopher T. Cross

To order the new edition of **The Keys to Literacy**, *contact Susannah Patton, Director of Academic Programs, Council for Basic Education, 1319 F Street, NW, Suite 900, Washington, DC 20004-1152*

A PRIMER ON PHONEMIC AWARENESS: WHY IT'S A GOOD IDEA

By Edward J. Kame'enui and Deborah C. Simmons

It is a common truism that ideas have consequences; good ideas generally have good consequences and bad ideas, bad consequences. Beginning reading, as both an area of scientific research and a domain of professional knowledge for teachers, has more than its wicked share of bad ideas (Liberman and Liberman, 1990; Kameenui, 1993). One of the worst ideas is the peculiar notion that "reading comes naturally," which suggests that children have a native or natural ability (perhaps even an instinct) to read, and to do so effortlessly and successfully at an early age, without systematic human intervention. Why is this a bad idea?

First, the notion that reading comes naturally defies logic. If reading is natural, why isn't it natural for *all* children: that is, *each* and *every* child in a family or a classroom? The facts are clear: approximately 15-20 percent of school-age children in the United States struggle mightily with reading (Lyon and Moats, 1997), which means they face difficulties with specific language skills, including spelling and writing. For these and many other children who face serious reading difficulties, reading does not come naturally, despite their average to above-average intelligence and fervid desire to read.

Second, this idea reflects a serious misunderstanding about the very act of reading in an alphabetic "writing system." By all appearances, reading looks like a fairly easy and natural thing to do. After all, almost everyone can do it, and, in fact, most people read with what appears to be little or no effort. However, the appearance of reading masks the very real and complex cognitive and linguistic processes of reading. The technical truth about reading is that learning to read is anything but natural. Instead, it requires unstinting and skillful human intervention and the orchestration of a number of

complex actions and skills involving the eyes, the brain, the mind (e.g., motivation, interest, past experience), the speech system, a language system, and a complex writing system. It is not readily understood that when we read, we read in a writing system, and in the case of English (or Spanish, Finnish, Italian), we read in an alphabetic writing system (instead of a logographic system such as Chinese, or a syllabary system such as Japanese Kana) (Rayner and Pollatsek, 1989). All

A critical foundational skill in teaching children to read is phonemic awareness.

writing systems are human inventions and must be learned, which means they must be *taught*. However, teaching the alphabetic writing system requires thoughtful design, execution, and management.

So, what is actually required to teach a child to read, and where do we begin? The scientific research is unambiguous; a critical foundational skill in teaching children to read is phonemic awareness (Adams, 1990; National Research Council, 1998; National Reading Panel, 2001; Smith, Simmons, and Kameenui, 1998). Phonemic awareness refers to "the ability to focus on and manipulate phonemes in spoken words" (National Reading Panel, 2001, p. 2-1.) There is a significant convergence of research that places the lack of phonemic awareness at the heart of serious reading difficulty. This problem is often characterized as a "phonological core deficit" (Stanovich, 2000, p. 67; Vellutino et al., 1996) because phonemic awareness taps a specific set of cognitive and linguistic processes that strongly influence early reading acquisition.

Tasks commonly used to evaluate a child's phonemic awareness include, for example, recognizing individual sounds in words (e.g., "Tell me the first sound in *mat*"); listening to a sequence of separately spoken sounds and combining them to form a recognizable word (e.g., "What word is /mmm/ /aaaaa/ /t/?"); breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a marker for each sound (e.g., "How many phonemes do you

hear in the word *mat*?"); and recognizing what word remains when a specific phoneme is removed (e.g., "What is *mat* without the /mmm/?") (National Reading Panel, 2001).

A careful review of these tasks reveals a provocative feature about phonemic awareness: even though it is a skill critical to reading in an alphabetic writing system, it does not require children to read any print. Phonemic awareness activities involve the manipulation of *sounds only*. Technically, once individual letters or words are paired and introduced with sounds, the task becomes an alphabetic or graphophonemic task (Smith, Simmons, and Kame'enui, 1998). As a result, researchers are quick to note that phonemic awareness is a *necessary* but *insufficient* foundational skill in beginning reading. Although it is very important to the fabric of beginning reading, it represents only one thread (albeit a very important one) in that complex linguistic tapestry.

Given the importance of teaching phonemic awareness, what does the trustworthy research say about teaching it? The most meritorious summary of the research on phonemic awareness is the Report of the National Reading Panel entitled *Teaching Children to Read: An Evidence-based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction* (2000). This report was written in response to a Congressional request to "assess the

Phonemic awareness activities involve the manipulation of sounds only.

status of research-based knowledge, including the effectiveness of various approaches to teaching reading" (National Reading Panel, 2000, p. 1). The Panel posed the questions, "Does instruction in phonemic awareness improve reading? If so, how is this instruction best provided?"

To answer this question, a fourteen-member panel developed and applied a "set of rigorous research methodological standards" (p. 5) to the research literature, and identified 52 experimental studies from 1,962 journal citations on phonological awareness instruction and training. The Panel reported these findings:

1. Teaching phonemic awareness (PA) is a very good idea. "…teaching children to manipulate phonemes in words was highly effective under a variety of teaching conditions with a variety of learners across a range of grade and age levels and teaching phonemic awareness to children significantly improves their reading more than instruction that lacks any attention to PA" (p. 7).
2. "…the effects of phonemic awareness instruction on reading lasted well beyond the end of training" (p. 7).
3. "Children of varying abilities improved their PA and their reading skills as a function of PA training" (p. 7).
4. "PA instruction also helped normally achieving children learn to spell, and the effects lasted well beyond the end of training" (p. 8).
5. "…the characteristics of PA training found to be most effective in enhancing PA, reading, and spelling skills included explicitly and systematically teaching children to manipulate phonemes with letters, focusing the instruction on one or two types of phoneme manipulations rather than multiple types, and teaching children in small groups" (p. 8).

The National Reading Panel report also reminds us that phonemic instruction "does not constitute a complete reading program" (p. 8). Similarly, the report convincingly documents that reading does not come naturally. Instead, beginning reading must be taught, and the most trustworthy scientific evidence suggests that it must be taught carefully, strategically, explicitly, and systematically. This is not just a good idea, it is a *critical* idea that is scientifically trustworthy and publicly defensible.

* * *

For the complete reference list, contact the editor or consult the November 2001 Basic Education *linked to www.c-b-e.org.*

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VOCABULARY ACQUISITION: DIRECT TEACHING AND INDIRECT LEARNING

By Jean H. Osborn and Bonnie B. Armbruster

Vocabulary, its importance and its acquisition, has fascinated many researchers for many years. They have written a lot about how children acquire new vocabulary and about the relationship of vocabulary to school achievement. Many studies have established the importance of vocabulary knowledge to reading comprehension. Other research has examined how students acquire the meanings of new vocabulary and established that independent reading is an important *indirect* source of vocabulary acquisition. In addition, research has verified a number of approaches to *direct* vocabulary instruction. This body of research provides useful information about how children learn new words, and what to do to help them.

In the next three sections, we draw upon findings in our *Reading Instruction And Assessment: Understanding The IRA Standards*, recently published by Boston, Allyn and Bacon.

Some Findings About Vocabulary

Students who read widely know more words and knowing what words mean is strongly related to successful reading comprehension. Most children learn many new words in a year: estimates vary, but range from 3,000 to 4,000. Estimates also vary as to how many words can be taught *directly* as part of the curriculum, but range from only 300 to 500 words per year. Thus children must acquire most of their new vocabulary *indirectly*, through exposure to spoken and written language.

There are stages in "knowing" a word. Because vocabulary grows gradually over time though repeated exposures to

spoken and written words, it follows that children (and adults) have varying levels of vocabulary. One research team (Dale and O'Rourke, 1986) proposed four levels of word knowledge:

- I never saw it before.
- I've heard of it, but I don't know what it means.
- I recognize it in context; it has something to do with ...
- I know it.

"Knowing" a word is to understand its core meaning and that meaning may alter in different contexts. A reader does not have to know all words in a text to comprehend a text.

The context does not always help. Although children learn most vocabulary through repeated exposures to words in

Explicit context cues to word meanings are seldom available in spoken and written language.

context, explicit context cues to word meanings are seldom available in spoken and written language. Although teachers often urge their students to "use the context" to figure out the meanings of unknown words, the usefulness of that strategy depends upon what the students are reading. Furthermore, because single contexts have limited usefulness in providing information about meaning, research on how people learn from context has not been very successful.

Understanding a word involves more than knowing how to define it; it involves both definitional and contextual knowledge.

- *Definitional knowledge* is knowledge of the logical relationship of the word to other words, such as the category or class to which it belongs, and its synonyms and antonyms.
- *Contextual knowledge* is knowledge of how the word's meaning changes with different contexts.

When students actively try to connect new words to words they already know, they learn new vocabulary.

Repetition is important—most often, students require many exposures to new words before these become "known." And usefulness is important—students are more likely to remember words that are useful to them in reading and writing.

Direct Vocabulary Teaching

Research suggests three important components to the successful direct teaching of vocabulary:

- Provide both definitional and contextual information to students.
- Actively involve students in grappling with the meanings of new words.
- Provide many exposures in both spoken and written language to new words.

More is better.

Selecting Words to Teach

Classroom time for direct vocabulary instruction is limited. Which words to teach directly? Research offers three suggestions:

- Teach vocabulary for conceptually difficult content areas like science and social studies.
- Teach vocabulary important to the meaning of what students are reading in both narrative and expository texts.
- Teach the parts of words—prefixes, suffixes, and root words are especially useful for vocabulary related to content areas.

Indirect Vocabulary Learning

Although well-conceived vocabulary instruction contributes to the acquisition of new vocabulary, most of what school-age students learn occurs as they read independently. According

Most ... vocabulary is learned in contexts other than formal learning.

to the National Reading Panel (2000), estimates of vocabulary size imply that most of a student's vocabulary is learned in contexts other than formal learning.

Two researchers who have conducted many investigations into the acquisition of vocabulary point to the importance of "reading volume." In an important paper, aptly titled "What Reading Does for the Mind," Cunningham and Stanovich vividly describe the effects of positive reading experiences on

children's vocabulary acquisition and other aspects of reading. They point out that children who have trouble learning to read are exposed to much less printed text than children who are progressing normally. Not only do these poor readers read less, they are often given text much too difficult for them. One severe consequence of inadequate reading practice is:

> Slow, capacity-draining word recognition processes require cognitive resources that should be allocated to comprehension. Thus, reading for meaning is hindered; unrewarding reading experiences multiply; and practice is avoided or merely tolerated without real cognitive involvement. (p. 8)

In contrast, Cunningham and Stanovich observe that the early experiences of good readers have many positive consequences for their future cognitive development. Because they

The early experiences of good readers have many positive consequences for their future cognitive development.

can read, these children read more text and encounter more words. And avid readers read even more text and encounter even more words. Acknowledging the importance to reading comprehension of general language skills, such as already existing vocabulary, background knowledge, and familiarity with complex syntactic structures, Cunningham and Stanovich propose that reading a lot, that is, "reading volume," serves to develop these general skills.

In a series of studies with students of many ages, these researchers and their colleagues establish that the combination of early reading acquisition and continuing reading volume contribute to growth in the verbal skills and general knowledge of students of all ages and all abilities. One conclusion they reach is particularly important to consider in working with less able readers:

> All of our studies have demonstrated that reading yields significant dividends for everyone—not just for the "smart kids" or the more able readers. Even the child with limited reading comprehension skills will build vocabulary and

cognitive structures through reading. (p. 14)

In advocating that as many reading experiences as possible be provided for all children, regardless of their achievement levels, they suggest that "this becomes doubly imperative for precisely those children whose verbal abilities are most in need of bolstering, for it is the very act of reading that can build their capacities." (p. 15)

Providing Many Reading Experiences for All Children

To enjoy the benefits of reading volume, students must have easy access to books that interest them and offer reading challenges at their level. For the many children who cannot get to public libraries, classroom and school libraries must be stocked with books they can read in school and take home, even during summer vacation. When appropriate, teachers should emphasize to parents the importance of their children regularly reading at home.

The benefits of reading volume will occur when students can read, want to read, and do read. But they must have books available to them. It is our obligation as citizens and community members to provide such opportunities for all students in our schools.

* * *

For the complete reference list, contact the editor or consult the November 2001 Basic Education *linked to www.c-b-e.org.*

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EARLY INTERVENTION FOR CHILDREN AT-RISK FOR READING FAILURE

By G. Reid Lyon and Jack M. Fletcher

As the authors in this issue of *Basic Education* point out consistently, good readers understand how print represents the sounds of speech, they can apply phonemic and phonics skills rapidly and fluently, and they possess vocabularies and other language abilities sufficient to actively connect what they are reading to their background knowledge and experiences. Conversely, the children who are most likely to have reading difficulties enter kindergarten without sufficient phonological processing skills, and they fail to develop adequate word reading ability.

This bottleneck in word reading skills limits their ability to learn how to read in a fluent fashion with good comprehension. Their reading is typically slow and laborious, which impedes their understanding of what is read. Among these children, the effort exerted in reading is frequently not rewarded by enjoyment and learning. A frustrated child and decreasing attempts to read are often observed. Limited reading practice and experience result in weak vocabulary development and difficulties in learning other academic subjects. And the cycle goes on (see Fletcher and Lyon, 1998 and Snow, Burns, and Griffin, 1998 for a review of these issues).

Unfortunately, most children who have these early difficulties learning to read continue to have them throughout

The effort exerted in reading is frequently not rewarded by enjoyment and learning.

their school careers, primarily because they do not receive instruction of good quality soon enough. Indeed, most children who display the types of reading difficulties described

here do not receive "specialized" instruction until the third grade or beyond. This is far too late. The long-term development of reading skills appears to be more difficult to alter the older a child becomes, despite attempts to remediate the problem in later elementary school and beyond (Moody, Vaughn, Hughes, and Fisher, 2000). In a recent analysis, Hanushek and his associates (1998) found that placement in special education for reading difficulties was associated with a gain of only 0.04 standard deviations on reading measures. Unfortunately, these gains are so small that children are not closing the gap between their academic performance and the demands of what they must learn. Even the most intensive interventions with older readers improve only a subset of critical reading skills (see Torgesen, 1997).

Because most reading remediation has not been effective, a number of recent studies have examined prevention and early

Among school-aged children ... anywhere from 18 percent to 38 percent are not learning to read in our nation's classrooms.

intervention approaches that have the potential to reduce the number of children failing to learn to read (see Lyon, Fletcher, et al., 2001 and Torgesen, 2000 for reviews). Torgesen, for example, summarized five prevention and early intervention approaches, all of which resulted in reduced reading difficulties among young children. Specifically, in all of the studies, children were identified as at risk for reading failure in kindergarten and first grade, based on assessment results that identified the children in the bottom 12-18 percent of the school population in either phonological processing (kindergarten) or word reading skills (first grade). After intervention, the reading performance of the children in the early intervention groups in each of the studies was well within the average range. The data strongly indicate that if the interventions used in these studies were available to all

children at risk for reading failure, less than six percent of the population would be in need of specialized interventions, such as those typically provided through special or compensatory education, for reading difficulties later in school. This is a massive improvement in the development of reading skills among school-aged children, of whom currently anywhere from 18 percent to 38 percent are not learning to read in our nation's classrooms.

In summary, our ability to design and implement effective early identification and intervention programs is undergoing rapid development. Many states, notably Texas and Virginia, have developed assessments for K-2 reading programs that are based upon the scientific evidence on reading development and reading instruction and are teacher-administered. Although the purpose of these instruments is to guide instruction, they also do a good job of identifying children at risk for reading difficulties. The success of these programs, combined with the results of high quality early reading intervention studies (see the Report of the National Reading Panel, 2000), tell us clearly that we must expand prevention and early intervention programs. Our children deserve no less.

* * *

For a complete reference list, contact the editor or consult the November 2001 Basic Education *linked to www.c-b-e.org.*

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ON-LINE STAFF DEVELOPMENT IN READING SKILLS

By Melissa B. Hayden and Muriel V. Berkeley

During the winter of 2001, we conducted a four-month pilot study to evaluate teachers' reactions to an on-line course on the processes and acquisition of reading, using only course materials that present techniques of reading instruction demonstrated to be effective by research. The course focused on the early reading skills necessary to decode and comprehend text. We anticipated that teachers would appreciate such a course due to increasing certification requirements in reading and to the plethora of current research about how people learn to read. We were the first to offer a course on-line, and one based solely on empirical research.

Twenty-three teachers from inner city Baltimore elementary schools enrolled in the course to earn credits required to maintain their certification and to take advantage of the convenience that an on-line class offers. Many also stated that they wanted to learn more about the research base and instructional design features underlying the curriculum that they used to teach reading. Most of the teachers had never taken an on-line course before. Their experience ranged from

Most of the teachers had never taken an on-line course before.

that of a first-year novice with no formal teacher training, to a veteran of twenty-five years with thirty credits beyond her master's degree. Eighteen teachers used Reading Mastery, a Direct Instruction reading program. The others used Open Court or Houghton-Mifflin.

For the course, the teachers used Blackboard internet software, which they were taught during a three-hour training

session, to access course materials, send and receive assignments, post comments on the virtual discussion board, and check grades. Course materials were posted on the Baltimore City Public Schools website (http://bcpss.org). Each week the teachers answered questions about the readings and wrote in their journals about one of the instructional techniques shown by research to be effective. The teachers kept weekly logs in which they discussed the readings and noted how much time they were spending on the class.

Teachers used skills and teaching strategies that they studied in the readings.

The instructor reviewed assignments and provided feedback within a day. Students could interact with the instructor by telephone, e-mail, or face-to-face appointments. The class met each month to discuss the research findings in the course readings and techniques for applying this information in their reading lessons.

We reviewed the weekly assignments to determine what the teachers were learning, and we observed in their classrooms to identify how they applied what they learned. We surveyed the teachers in the middle and at the end of the course to see what they thought about the class.

Teachers' Responses to the Research-Based Information and Teaching Strategies

The teachers excelled on their assignments, but even more important, they used what they were learning when teaching students, working with colleagues, and talking with parents. In the eighteen classrooms where we observed, teachers used skills and teaching strategies that they studied in the readings. For example, during the class visits with the pre-kindergarten teachers, the observer noted that the lessons included the oral language and beginning reading skills covered in the readings. Teachers also: (a) taught reading skills to mastery, (b) assessed student performance within and across lessons, and (c) responded to the performance data.

The teachers reported transferring the information that they had learned to instruction. A novice teacher recounted a situation where she was able to rely on the class information to solve an instructional problem.

> I had come to the lesson before the introduction of short y (/y/ as in "yellow") and discovered the students were not at all firm with long y (/y/ as in "my"). Because of what we've learned in the class, I didn't have any questions about what I needed to do. Since new sounds are firmed for several [lessons] before appearing in words, the only part of the next few lessons I needed to change was sounds firm-up. I used the procedure for introducing a totally new sound and then made a page of sounds where I went to the new sound (/y/ as in "yellow"), then to one other sound, back to new sound, then two other sounds, then new sound, then three other sounds, and so forth. Because of the studying we did on how far apart to separate visually similar sounds, I knew that it would need to be firmed for a minimum of three or four days before going on to the new sound.

A veteran teacher commented, "I can now question the curriculum from a knowledge base rather than a 'gut feeling' that things are not going well. Now I know why, at least for the phonics part. I can design a lesson with confidence I never had before."

"I can now question the curriculum from a knowledge base."

All twenty-three teachers reported that the information they were learning was useful. One teacher remarked, "The material is so relevant that I am able to quickly comprehend it and relate it, therefore I don't spend a lot of time on it." Several teachers, however, reported that they spent more time, "because the material was extremely meaningful."

One teacher commented, "Taking this course has been a valuable experience. The knowledge I am gaining is helping me to become a better teacher and professional." Others agreed

that the new knowledge they had acquired helped them to do their jobs better:

- "helps with coaching and parent conferences"
- "understanding student performance"
- "helps me to break down the process of reading and better instruct struggling readers."

Interestingly, one teacher commented, "I have used Open Court for several years. Now I understand what I am doing and the importance of phonemic awareness."

Several teachers observed ruefully that they had never been exposed to this information in their college teacher preparation programs. One teacher commented, "After twenty-five years—a B. S. and an M.Ed. as well as almost thirty credits beyond my masters—I have finally found a course to explicitly teach me how to teach reading." Some teachers remarked that they felt cheated, not having known the information until taking this class, "I value the information I've gained because it is research-based. The research-based principles are supported

"I am disturbed that my undergraduate school did not provide me with this information earlier."

with evidence, and that's what I like and expect from a curriculum. I am disturbed that my undergraduate school did not provide me with this information earlier."

Teachers' Reaction to the On-line Format

Teachers reported that they appreciated the convenience of an on-line course but missed the in-person contact of traditional courses.

- "You are working at your own pace and you are working from your home."
- "Less time spent driving. If I have any questions they can be answered immediately."

One teacher commented, "It is a great thing to have such sophisticated conversations with other Baltimore teachers. It

builds a network and boosts morale."

In conclusion, we learned that teachers thought that the course information was interesting and useful, the time commitment reasonable, and the on-line experience one that provided flexibility in their schedules. We saw evidence that teachers used course materials with their students, their colleagues, and their students' parents and guardians.

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DID YOU KNOW?

By Anne Rogers Poliakoff and M. René Islas

Student High Hopes Not Shared by Teachers, Principals

A recent survey sponsored by Metropolitan Life indicates that minority students have much higher hopes for their futures than do their principals or teachers. Nearly three-fourths of the African-American and Hispanic students surveyed reported high expectations for their futures. Only 40 percent of teachers and barely half the principals in schools with two-thirds minority enrollment believed that the teachers in those schools had high expectations for all students. The survey found many ways that views of students, teachers, and principals differed dramatically: e.g., two-thirds of secondary school principals, half the teachers, but only one-fourth the students found the curricula challenging. To download "American Teacher 2001: Key Elements of Quality Schools" visit www.metlife.com.

Readiness of Kindergartners for School

Two-thirds of first-time kindergartners recognize alphabet letters by name. Slightly fewer have two more print familiarity skills, i.e. understanding where a story ends, or that English is read from left to right. Most entering kindergarten (94 percent) recognize single-digit numerals and simple shapes like squares or triangles. Nearly 60 percent count beyond ten and recognize all single-digit numerals. Nearly half, however, have families with one or more of four risk factors: a mother with less than a high school education, a family that receives food stamps or cash welfare, a single-parent household, or parents whose primary language is not English. See "Entering Kindergarten: Findings from The Condition of Education 2000" from the U.S. Department of Education, NCES, 2001, http://nces.ed.gov.

Public Attitudes Towards Smaller vs. Larger High Schools

A recent Public Agenda survey finds that teachers and parents see many advantages to smaller high schools (500 or fewer students), but most believe reducing class size or improving discipline more likely to improve education. More than 70 percent of secondary students attend schools with 1000+ students; half attend schools with more than 1,500. Visit www.publicagenda.org.

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